

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCIII.—THURSDAY, AUGUST 12, 1875.—NO. 7.

THE INNER SURFACE OF THE UTERUS AFTER PARTURITION.¹

BY LEONARD WHEELER, M. D., OF WORCESTER.

THE time which I propose to occupy will not allow of lengthy discussions or citations, and I shall therefore endeavor to draw a definite picture, agreeing, as far as possible, with the present state of knowledge upon my subject.

Within five years the study of the anatomical relations of embryo, foetus, and mother seems to have been earnestly taken up anew; for the first time it has been studied with all the arts and appliances of modern microscopy, especially from thin sections. During this time, the work of several persevering investigators has resulted in some definite additions to our knowledge of a subject upon which comparatively little had hitherto been definitively known, and upon which many prevalent ideas were false. The subject is interesting in any aspect, but specially and practically so as helping to an understanding of another, upon which there has been even more discussion and less agreement, namely, puerperal fever.

The little advance we now boast is the first for just a century; for, apart from the microscopical details in which this advance consists, the descriptions of William Hunter "may be justly characterized as all true and containing all the truth." John Hunter advanced incorrect views of his own after his brother's death, views which his great name propelled through all the medical literature of more than half a century, and even into the text-books of the present decade. His was the coagulable-lymph theory. William Hunter's level was not again reached till the present generation. After the publication of Cruveilhier's Pathological Anatomy, the opinion therein expressed was law for the world till Virchow appeared. Cruveilhier said that the inner surface of the uterus after parturition was clean muscle, and compared it to a stump after amputation. Twenty-five years ago Virchow renewed the theory of William Hunter. About the same time the French school set forth the opinion that a new mucous membrane began to be devel-

¹ Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1875.

oped under the old during pregnancy, so early even as the fourth month, and this opinion was supported by Priestley in his *Lectures on the Development of the Gravid Uterus*, published in 1860. The opinion of Cruveilhier has also found recent supporters, as Kölliker and others. Matthews Duncan long ago earnestly maintained the theory of Hunter and Virchow, now universally acknowledged, that the muscle is never exposed.

The origin of the new epithelial covering of the involuted uterus was always a vexed question. It had been accounted for, on the one hand, by derivation from connective-tissue cells, and, on the other, by rapid proliferation from the cervical mucous membrane.

The first thorough microscopical observations were reported by Friedländer in 1870, the latest in a long article by Engelmann, of St. Louis, in a recent number of the *American Journal of Obstetrics*. This latter, the common work of Kundrat, in Vienna, and Engelmann, is a valuable addition to the English literature of the subject, and so comprehensive that had it appeared in season I should have allowed it to absorb the place of this paper; still I hope my briefer and differently handled statement will also have its value.

In health the mucous membrane of the adult uterus consists of an outer layer, lying next to the muscle, and composed of connective tissue with fibre cells; it supports an inner coat of ciliated epithelium, which sends numerous single and bifurcated glandular prolongations through the outer layer down to the muscle. During pregnancy it is much changed; in the first weeks the connective-tissue layer increases enormously, becoming five or six times as thick as in health, and, at its junction with the cervical mucous membrane, it bulges down over the latter; toward the inner surface it loses its fibrous character, and becomes more and more richly cellular. The epithelial covering mostly disappears. The glands lengthen, and the lower ends branch.

A transverse section shows the membrane so much changed that two layers are now distinguishable: an inner, toward the uterine cavity, consisting almost entirely of round cells, with a small amount of inter-cellular substance (the cells resembling epithelium, though derived probably from connective tissue), and an outer, made up of spindle-shaped cells and gland cavities lined with epithelium. Later, with the rapid increase in size of the uterus, the whole membrane becomes thinner, but the connective tissue seems to have overwhelmed the epithelial layer, which, as a layer, disappears, the only epithelium left adherent to the uterus being that lining the glands.

The ovum, issuing from the Fallopian tube upon this membrane, finds a nidus in one of its folds, which soon enwraps it in the miscalled *decidua reflexa*. The villi of its chorion become gently adherent by a mucous mucilage, and the formation of a placenta begins, not, as has

always been held, by the villi plunging deep into the glands, but by a general reception of the villi into the substance of the mucosa, the mucous membrane growing up about them. Where the villi happen to lodge at the mouth of a gland, the decidual tissue is piled up around them the same as elsewhere, and so for a short distance they are within the gland, but as a rule the villi are not inclosed in glandular epithelium. The union of placenta and decidua does not become inseparably firm till during the third month.

And here our settled knowledge of the maternal parts ceases, for there is no unanimity of opinion upon the character of the maternal framework which supports the foetal villi. In the fully-formed placenta the amount of this maternal portion is found to be comparatively small, forming an irregular framework for the villi. According to Winkler, who seems to have made very successful sections, it is a prolongation of the intercellular substance of the cell layer of the decidua, which forms a loose mesh, the framework of the whole placenta, the trellis upon and in which the villi are supported. It is covered with endothelium, and the villi are either imbedded in it entirely or only for a part of their circumference, while a few hang loosely in its sinuses. The villi are covered with epithelium, except where in contact with the maternal structure; here intercellular substance unites with intercellular substance, and a way unbarred by epithelium or endothelium exists between maternal and foetal parts—an unprotected way for the transmission of hereditary virtue or vice.

By others the sinus-system is regarded as merely an extension and dilatation of the inner coat of the maternal vessels. But even the existence of a sinus-system has been disputed by such men as Velpau and Ramsbotham, and, in a recent long paper, by Braxton Hicks.

To recapitulate, then, we have from without inward (1) muscular layer of the uterus with its sinuses, (2) gland layer of the decidua, (3) cell layer of same, (4) maternal framework of intercellular matter supporting the foetal villi, (5) chorion, (6) amnion.

Now where is the line of separation of the decidua at the time of parturition? With an understanding of the anatomy of the pregnant uterus, a further knowledge of the microscopic appearances of the outer surface of the delivered placenta, and of the inner surface of the uterus after expulsion of the ovum, would demonstrate the line of separation. The expelled ovum particularly has been examined by many observers, and opinions as to the histological formation of its maternal surface are pretty well agreed; the appearances described correspond excellently with those of the inner, cell-layer of the decidua, *i. e.*, judging from this, the whole gland layer, at least, must be left within the uterus.

That this is in reality the case was first proved by Friedländer;

but though all honor is due him, the same view was stated with sufficient distinctness, as long ago as 1854, by Chisholm, who, in describing the post-mortem appearances of the uterine mucous membrane in the case of a woman who died on the seventh day after delivery, says, "There were numbers of minute oval and circular depressions studded very regularly over the internal surface. They were distinctly visible to the naked eye, and the largest of them might have admitted the head of a pin. Little more concerning these depressions could be made out with the microscope, but we have found similar appearances constantly presented by the mucous membrane of pregnant uteri among the lower mammalia, and no one can for a moment doubt that they are the openings of the follicles of the mucous membrane."

I have had a single opportunity of testing the truth of this. The patient, a woman at full term with her first child, died suddenly after a few weeks of acute kidney trouble. The membranes and placenta were lightly adherent over the whole inner surface of the cavity of the uterus, so lightly that only the slightest traction was necessary to separate them. The divided layers were rough, and yellowish red in color. Pieces of the uterus being hardened and sections made, the inside layer was found a line or two in thickness, and apparently covered the muscle everywhere. It was made up of two layers: a continuous internal one of small cells, and an external one with more intercellular substance and fibre cells, and interrupted by numerous elongated cavities. Over the placental site, where in this case there were, of course, no thrombi, this layer seemed to be thinner and the glands scarcer; indeed, it was often wanting, so that the muscle was left exposed, though I could not be sure this was not an effect of my manipulation.

We have, therefore, over the whole inside of the uterus (except the cervix, which retains its whole mucous membrane), not the naked muscle, but the outer layer of the mucous membrane. There is no coating of epithelium over it; there has been a solution of continuity, and the whole is a wounded surface composed of connective tissue, a surface well fitted, apparently, for resorption of different substances into the blood or lymph systems. Under the present circumstances, however, there is no necessity of having recourse to connective tissue, or to the epithelium of the cervix even, for the source of a new epithelial layer. Epithelium is lacking on the surface, but there are plenty of deposits below in the gland-cavities of the outer layer of the mucous membrane, which still remains undisturbed in the uterus.

This question of the process of renewal of the epithelial covering is a difficult one. It must necessarily be determined from fine sections of the part at particular times, and it is very hard to get proper material from healthy uteri at these times, since the puerperal woman, if she

dies, succumbs generally to a disease involving exactly that part which it is desired to examine. Further, the study of the subject on animals leads to no competent result, since the conditions are very different. In animals, when the epithelial covering does not remain entire, there is, at most, a very small wound at the placental seat. The guinea-pig, for instance, may conceive a few hours after parturition, so slight is the influence of pregnancy on the state of the organs.

The process as now explained is as follows : during the first week after parturition the surface of the uterus is covered with a soft, dirty, dark-red sheet of variable thickness, which is easily washed away by a gentle stream of water, the gradually degenerating part of the cell-layer of the decidua. Washed away, it leaves a dark-red, ragged, still living, but fast exfoliating surface. The placental site is distinguished by the greater unevenness of surface, caused by the projecting thrombi of the veins. Under the microscope, the soft sheet which can be washed off is found to consist principally of large round cells filled with fat, and some few spindle-shaped cells, some epithelium, red and white blood corpuscles, and much free fat ; in other words, the altered constituents of the cell-layer of the decidua. In fine transverse sections the following condition is found : on the muscle lies the whole of the gland-layer, and, inside of this, toward the cavity of the uterus, a part of the cell-layer already in the midst of a process of rapid degeneration ; both these layers are infiltrated with blood corpuscles. The cell-layer is much reduced in thickness, and, even in the first week, is sometimes entirely absent in spots, leaving at points the epithelium of the gland-cavities of the layer beneath exposed.

In the second week, the fluid covering the inner surface is thinner and less red, while the real inner surface is less ragged and has more consistency ; it is no longer possible to wash away portions of it with a stream of water. The thrombi of the placental seat are gray in color and less prominent. Microscopically, the fluid covering has less of the other constituents, but more pus and epithelium. On section, it is found that the cell-layer of the decidua has almost entirely disappeared, leaving the gland-layer exposed ; not only that, but the connective tissue around the epithelium-clothed cavities is fast undergoing fatty degeneration, and the epithelium has been exposed in many spots, so that we have innumerable points, skin grafts as it were, spread over the whole surface.

In the third week the surface is nearly smooth, and is now entirely covered with cylinder epithelium which dips down here and there, leaving a wide opening into epithelium-lined cavities — the ends of the glands which have been buried during pregnancy. On the placental seat alone little spaces remain uncovered by epithelium, that is, the projecting thrombi ; still these are much reduced in size. Otherwise

the placental seat is like the rest of the surface. A little of the purulent fluid remains, which disappears finally at about the fourth week. After this time the changes are merely an increasing thickness of the mucous membrane and consequent lengthening of the glands, while the epithelium receives a fringe of cilia.

The process is then as follows: the line of division between placenta and uterus runs through the cell-layer of the decidua. The portion of this layer left in the uterus is infiltrated with blood; it goes through the process of fatty degeneration, and its degenerated remains form a large part of the lochia. By this process the gland-layer is brought nearer the surface, and the glands are laid open. Innumerable little islets of epithelium are gradually presented over the surface. The tissue between these continues to degenerate; the whole uterus grows smaller, and the patches of epithelium are thus brought nearer and nearer together, till the space remaining to be covered is extremely small; and finally, this is filled by a new growth of epithelial cells.

UMBILICAL HERNIA; ACCIDENTAL RUPTURE OF THE TUMOR.

BY CHARLES O'LEARY, M. D., OF PROVIDENCE, R. I.

EARLY on Sunday morning, May 30th, I was called to see a patient on the outskirts of this city. Not being apprised of the urgency of the case, I did not reach the patient's house until ten o'clock A. M. On entering the room, I found a woman lying in bed in her dress; she was quite calm and composed. Being asked what the trouble was, she told me her bowels were all out, and directed me to examine and see. Raising her clothing, I beheld an enormous tumor in the left iliac region, with intestines (probably thirty inches of the large bowel and some portion of the small) protruding from it. The tumor was of cylindrical form; it measured eighteen inches in circumference at its base, and nine inches in height. It had on its upper surface three pouches, nearly of the shape and size of an average-sized lemon; one of them proved to be the umbilicus. When the tumor was dependent this umbilical pouch reached to the middle third of the thigh. In the longer diameter of the tumor was a rent between two and three inches in extent, through which the intestines protruded.

The history of the patient, as given by herself, was as follows: She was fifty-four years of age, married, and had had two children, the younger fourteen years of age; she had always had good health. Six years ago she noticed a swelling at the navel; as this enlarged she con-

sulted a physician, who recognized umbilical hernia, and advised her to have a truss applied ; this advice she neglected. As the tumor increased, she consulted one physician after another, but treated with the same neglect the advice of each. When the tumor gained the enormous proportion above given, with the abnormal displacement of the abdominal wall, she was told by those whom she consulted that they could devise no means of relieving her. She had continued, she said, to live comfortably, with the exception of some chafing and excoriation on the surface of the tumor, which she had relieved by applications. She had attended to her various occupations, those of a woman of the working class, and this with so little apparent inconvenience that her nearest neighbors did not know anything of her infirmity. She had not suffered from constipation or any symptom of bowel obstruction at any time since the first appearance of the tumor. Her habits had been temperate. She was corpulent, and presented every appearance of robust health.

The accident which brought about her present condition occurred on the evening of May 29th. Whilst walking to a neighboring store, she slipped and fell. She at once became aware of the rupture of the tumor, and felt the bowels protruding. She did not call for help, but tucked a fold of her under-clothes around the intestines, and walked home, a distance about the eighth of a mile. She betrayed no fear or alarm, and would not have a physician summoned before morning. She received with perfect composure the statement of the desperate nature of her condition, and expressed a willingness to submit to any operation which I deemed necessary.

Assisted by Mr. B. F. Gorman, a student of the Harvard Medical School, I administered ether, enlarged the rent already made, and with all care and precaution restored the bowels within the cavity of the tumor. I followed them with the hand into the abdominal cavity proper, but found I could not retain them there, as no sooner was the hand withdrawn than they escaped into the cavity of the tumor. The opening between the two cavities was, as it were, hooped by a dense band possessing the strength and resistance of cartilage ; to this band was due the cylindrical form of the tumor. Deeming all efforts to retain the bowels in the abdominal cavity unavailing, I left them in the cavity of the tumor, freed from twist or constriction, as far as I could ascertain. I sewed up the opening, and applied cold-water dressing, with compresses. Morphine was ordered in proper doses, at intervals, and such regimens prescribed as seemed most likely to prevent vomiting. She spent the day comfortably enough.

On Monday, she had well-marked peritonitis, with incipient gangrene of the pouches on the surface of the tumor.

On Tuesday, the pouches were ready to slough. The gangrene was

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extending. The peritonitis exhibited its usual progress, the abdomen
being extremely tympanitic.

Wednesday, vomiting became distressing; it was relieved only by
hypodermic injections of morphine. The patient felt great distress, with
pain in the abdomen. She retained her mental faculties unimpaired.

Thursday, 7½ A. M. The abdomen was tense, with great pain; a
hypodermic injection was administered. She inquired very calmly how
long she was to last. Gangrene of the pouches was now complete, with
signs of its extension to the tumor. I called at 12 M., when I learned
she had expired half an hour before my arrival.

During the extreme tension of the abdomen the tumor preserved its
contour. In the vomiting no stercoraceous matter was ejected. There
was no dejection after the date of the rupture. An autopsy was not
permitted.

RECENT PROGRESS IN THE TREATMENT OF CHILDREN'S DISEASES.¹

BY D. H. HAYDEN, M. D.

*Acute Rheumatism in Infancy and Childhood.*²—Three cases were presented: one, that of a little girl three years old, was complicated with endocarditis and incompetency of the mitral valve; the second case, of a girl ten years old, was complicated with endocarditis at the orifice of the pulmonary artery, solidification of the right lung, and pulmonary haemorrhage; the third case, of a little girl four years old, was complicated with endocarditis. In opposition to the statement in most books on the subject, Professor Jacobi considers acute rheumatism a not infrequent affection in infancy and childhood. Uncomplicated muscular rheumatism, however, is rare; and, when it appears to be present, the muscular pain can in most cases be easily explained, as in torticollis, where there is often an affection of the spinal cord or a haemorrhage in the sterno-cleido-mastoid muscle.

The peculiar symptomatology of acute rheumatism in childhood causes the disease to be readily overlooked, the swelling of the joints being often trifling, and the pain not always excessive; the temperature is rarely very high as long as polyarthritis is the only symptom, and sometimes, indeed, it is low after the first attack of an acute endocarditis has set in; perspiration is not copious; the urine is frequently copious and pale, and the amount of uric acid in children, whether rheumatic or not, is not large. The author has met with more female than

¹ Concluded from page 165.

² Series of American Clinical Lectures. Vol. I. No. II. By Professor A. Jacobi, M. D. New York : G. P. Putnam's Sons. 1875.

male patients. Visceral complications are more frequent in the young. Pericarditis and pleuritis are not at all rare ; but owing to the serous character of the exudations we frequently miss the friction sound as an aid to their diagnosis.

Cardiac complications are the rule, and an absence of them is very exceptional. The diagnosis of endocarditis is by no means beyond the reach of a doubt. When a murmur heard at the beginning is due to endocarditis, there is always a rise of temperature. So-called anaemic murmurs are rare in children ; and murmurs not due to organic lesions are likely after some time to disappear.

Whereas the large number of heart-diseases in newly-born and very young infants is confined to the right side, in children of five years and upwards it is found in the left side. The former are congenital, and the latter acquired. The explanation of this is the statistical fact that the congenital heart-disease seldom lasts into childhood : it destroys life. It means further that almost all the numerous heart-diseases of childhood up to puberty do not date from birth, but are the result of the most common cause of cardiac disease — rheumatism.

The organs constituting the nervous system are very liable to rheumatism. The symptoms differ greatly in the young and the old. Where in the adult the sensitive sphere is affected, in the child we find the motor powers suffering. Where we have delirium in the adult, in the child we have convulsions. A further difference is that a fatal termination is less frequent in the young.

The main cause of chorea is rheumatism. The author calls chorea, endocarditis, and polyarthritis "the coördinate symptoms of one and the same affection," and not one the cause of the other ; for if the latter were the case we would always find the symptoms in the same order, whereas the author has met with cases where endocarditis was for some time the only manifestation of the disease, this preceding all articular affections. In a boy three years old, he observed general chorea four or five days before the slightest symptom of rheumatism was perceptible in the joints. When the joints became affected, the choreic movements grew less. After a week, the articular swelling receding, chorea became more prominent again. In this manner nerve and joint rheumatism alternated three times in the course of two months, until, finally, the case wound up with a mild endocarditis, terminating in insufficiency of the mitral valve.

The diagnosis of acute rheumatism is but rarely difficult ; still mistakes are possible. Disorders of a purely nervous character are the more perplexing to many medical men the more they have been accustomed to look upon nervous (hysterical) symptoms as the privilege of the adult female ; whereas men may become hysterical, as may also children. Nervous symptoms of a most serious type are not excessively

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rare in children ; nor are well-developed neuroses of the motor, sensitive
and vaso-motor nerves exceptional.

The indications for treatment given are : Rest of inflamed joints, reduction of local and general heat, removal of hyperæmia, diminishing exudation and internal pressure, and relieving pain. A slight curvature is the easiest position for the diseased joint. There is no benefit to be hoped for from local depletion, save that a few leeches will occasionally prove beneficial, at least temporarily, on the knee-joint. Ice is more to be relied on than any other local application, being indicated in the acute stage, where the swelling is considerable and the temperature high. Later, when these have been reduced, warm applications are better ; of these, poultices, warm water, cold applications which remain long enough to become warm, or warm baths, are the best. In chronic cases, blisters or tincture of iodine may do good ; but their presumed stimulation of the vaso-motor nerves of the interior is based more upon theoretical reasoning than upon actual proof. At a still later period, if the exudation continue stationary, gentle compression by means of collodion, flannel bandages, cotton with linen bandages, or plaster of Paris, is required. A beneficial effect is also claimed for mild galvanic currents passing through the joints from one to three times daily from five to ten minutes. Chloroform, belladonna, opium, or veratria, in lotions or ointment, is to be used for relief of pain. If this is very severe, a subcutaneous injection of morphine may be required.

Internal medication is resorted to upon the same indications ; and, whether we use aconite, digitalis, veratrum, colchicum, or quinine, larger doses are required than the usual proportion-tables seem to justify ; and whatever effect is to be obtained must be secured rapidly.

The author relies on veratrum viride where the principal object is the reduction of the pulse. Aconite and digitalis are slower in their action, but may be continued for a longer time. The general rule is to push the dose until the pulse has fallen considerably, but not to the normal point, then to maintain the dose for two or three days, and finally cautiously diminish it. At any rise in the pulse, the dose must be increased. In careless hands, veratrum is a very dangerous remedy, and cannot be handled so freely ; and the dose must often be diminished more rapidly, lest the vascular sedation become excessive.

At the head of antiphlogistic remedies stands quinine. When indicated at all, it should be given in a dose of five grains, once, twice, or thrice daily to a child one or two years old. It is necessary to be certain of the solubility of the preparation. The sulphate ought to be avoided, and the bisulphate or muriate selected. It should never be forgotten that the stomach absorbs less under a feverish condition. Where it rebels against the remedy, the rectum may take its place ; but it will absorb nothing unless in solution.

The iodide of potassium, to do any good, must be given early, immediately after the fever has been subdued, in doses of from fifteen grains to a drachm or more, according to age.

Colchicum and colchicin (in three or four daily doses of one hundred and fiftieth of a grain to a child four or five years old, and gently increased from day to day) are of very doubtful effect, save as an arterial sedative, and is apt to produce vomiting and diarrhoea.

The author has no belief in the "acid theory" of rheumatism, and does not employ alkaline remedies. Their principal effect is diuretic, and the amount of uric acid in the urine of children, whether rheumatic or not, is not large.

The indications for the treatment of the cardiac, cerebral, or spinal complications differ hardly from that of the joint affection. In endocarditis, and particularly in pericarditis, the constant use of ice is most beneficial. When the acute stage has passed by, warm baths of about 90° (Fahrenheit) need not be feared in heart-diseases more than in other subacute or chronic inflammations.

For the treatment of the "choreic manifestations of rheumatism," the author relies principally on arsenic. Next in order he ranks bromide of potassium. Lastly, nitrate of silver and atropia. Rest is secured by chloral hydrate or large doses of bromide of potassium; the muscular irritability is soothed by subcutaneous injections of woorara. In protracted and feverless cases, as also in chronic cases of rheumatism, a daily bath, containing from three to five ounces of the sulphide of potassium, and the galvanic current, are very efficient. In cases of acute chorea dependent upon meningeal or medullary congestion or inflammation, the author relies principally upon ergot. Failures with this remedy he feels positive are due to the insufficiency of the dose. Less than half a drachm of Squibb's fluid extract he rarely gives; and repeats it three or four times daily. A child four or five years old may take from two to four drachms daily for many weeks in succession. Bad effects of the medicine he has never seen. The stories of acute or chronic poisoning, with a very few exceptions, concern individuals whose constitutions were previously broken down by long-continued misery and starvation.

Trismus and Tetanus Neonatorum treated with Chloral Hydrate.¹—The views as to the prognosis of this disease have been of late very much changed by the results of experiments in the wards of Professor Widerhofer, in Franz-Josef's Children's Hospital, Vienna. A large number of cases of recovery have been reported by Professor Widerhofer's assistants: Kirchstetter (injections of atropine), Monti (extractum calabarisi), Auchenthaler (chloral hydrate).

The theory first advanced by Dr. A. Monti, "that when the temper-

¹ Dr. A. Von Hüttner, *Wiener Jahrbuch für Kinderheilkunde*, i., 1874.

ature does not go above 102° the prognosis is favorable," has been as a rule confirmed. There were, however, exceptions, as for example, in one case of Kirchstetter's, where the temperature went above 104° Fahrenheit. The author would prefer to state the proposition as follows: "Cases of tetanus neonatorum, when the result of a general disease (pyæmia, septicæmia), are always fatal. In other cases, the prognosis is so much the more favorable the longer the duration of the disease and the less fever there is that accompanies it."

There is no specific action of chloral hydrate. By relaxing the spasm in the muscles the child is kept alive until the cause of the disease ceases to act. Extract of calabar bean acts in the same way. Chloral hydrate is administered in Widerhofer's wards as follows: one or two grains, dissolved in breast-milk, are given through the nose. This causes generally, by irritation, a paroxysm. The number and size of the doses are so arranged as to obtain a long sleep; and after every paroxysm the dose is repeated. It is of course important to give as much nourishment as possible. Meteorism and diarrhoea if present must be combated; but opium is to be avoided. One necessary caution is to stop the medicine as soon as there is a smell of chloroform in the breath.

*Croupous Pneumonia and Meningitis Cerebro-Spinalis in Infants under one year old.*¹—After the disappearance of the epidemic of cerebro-spinal meningitis in Erlangen during the years 1864–66, six cases of this disease in infants complicated with pneumonia came under Maurer's observation. Whereas in adults this complication does not ordinarily present symptoms sufficiently pregnant to enable a diagnosis of the meningitis, in infants under one year of age this is generally easy. The most marked symptom is the prominence and increased tension of the anterior fontanelle, which shows itself very soon after the first appearance of cerebral symptoms, when these latter are dependent upon the meningitis. The other symptoms observed by the author were loss of consciousness, convulsions, and, though not always, contraction of the recti muscles of the eye, hyperesthesia of the auditory and optic nerve, and changes in the pupils. The appearance of convulsions makes the diagnosis sure. In all the six cases these occurred during the stage of resolution of the pneumonia, whereas when they constitute a symptom of the so-called form of "cerebral pneumonia," they occur at the beginning of the disease. The diagnosis of a cerebro-spinal meningitis complicating a pneumonia from acute meningitis accompanying the same would be almost impossible; but the coexistence of the two latter diseases is so extremely rare that it need not be taken into account. Acute hydrocephalus, without tuberclosis, is an equally rare

¹ Deutsches Archiv für klinische Medicin, xiv. 1.; Allgemeine medicinische Central-Zeitung, January 6, 1875. Dr. Maurer.

complication. Acute hydrocephalus, when one symptom of tubercular meningitis, causes such characteristic changes in the pulse, respiration, ophthalmoscopic appearances, and course of the disease, that a differential diagnosis would be easy.

*Diet of Infants affected with Acute Intestinal Catarrh.*¹ — DR. R. Demme, after an experience of twelve years, recommends as the most appropriate food for infants affected with gastric or intestinal catarrh the following diet: Add from a quarter of a pound to a pound of beef, freed of fat, to two quarts of cold water, and let this stand from half an hour to an hour; then boil down to one pint; after cooling, skim off fat from the top and filter. At each time of using (every two or three hours), without being warmed, this is to be mixed with freshly prepared rice or barley water. In the intervals of meals the latter should be given alone, best without sugar, to relieve the thirst. If this food is refused he gives a drink made with the white of an egg, using according to age from one to three eggs in half a pint to a pint of water which has been previously boiled and cooled down to 98°. If the child's strength begins to fail, brandy in doses of from five to thirty drops is added to the rice or barley water, from three to five times a day. With older children a mixture of milk with the rice-water or barley water may be tried.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. SWAN, M. D., SECRETARY.

APRIL 10, 1875. — The President, DR. R. L. HODGDON, in the chair.

Ovariotomy. — DR. LYMAN read for Dr. Chadwick a case of fatal ovariotomy. The case was published in the JOURNAL of July 22, 1875.

DR. STEDMAN, in reference to this paper, asked if in injecting intestine with nutrient fluid through a puncturing tube there were not danger of inflammation from accidental escape of the fluid.

DR. MINOT said he had once given great relief by pumping out a large quantity of fluid from an intestine punctured for the purpose.

Peritonitis and Pelvic Abscess in a Young Girl. — DR. MINOT reported the case as follows: —

"Miss M. G., thirteen years and seven months old, always healthy, began to menstruate for the third time early in the morning of January 26, 1875, twenty-nine days after the beginning of the second epoch, which period occurred three weeks from the beginning of the first. There had been no pain or trouble at either of the periods. The last one ceased on the 29th, having lasted but three days; the two previous ones lasted four days each. Her

¹ Eleventh Annual Report of the Jenner Children's Hospital in Berne. Allgemeine medicinische Central-Zeitung, December 23, 1874.

mother kept her at home on the 26th and 27th, as a precaution, but she went to school as usual on the 28th and 29th, both of which days were mild. So far as she knew, she did not get chilled or fatigued. The bowels were in good order.

"On the evening of the 29th she complained of pain in the abdomen, which continued all the next day. I first saw her that evening (the 30th). She was in bed, complaining of steady pain, with exacerbations, over the pubes, and of considerable tenderness over the whole of the lower part of the abdomen, but not of the region above the umbilicus. The pain continued with severity during the night, and the patient got but little sleep. The next morning (January 31st) there was extreme tenderness over the pubes; the pulse was 128, the temperature 101.2°. The limbs were drawn up. There was no headache. There had been no rigor until early this morning, when one occurred, lasting some time. The pain was relieved by repeated injections of morphia under the skin, but recurred frequently during the day. There was also vomiting, or rather regurgitation of everything taken into the stomach.

"February 1st. The night had been comfortable as respects pain, but the patient had vomited several times. Pulse 120; temperature 99.9°. Tenderness was most marked in the right iliac fossa. The legs were constantly drawn up, and supported by a pillow. The urine was passed without catheter. She was kept comfortable by occasional injections of morphia, one sixth of a grain each. At night the pulse fell to 104.

"February 2d. An attack of nervous excitement, with delirium, at eight o'clock this morning, which was quieted by morphia. Pulse 108. Decubitus still dorsal, the knees supported on a pillow. Tenderness as before; percusion sound in lower part of abdomen quite dull. Urine without catheter, twice in twenty-four hours. Pulse at night, 120.

"February 3d. Severe attack of pain at five A. M., relieved by morphia. Pulse 120. At nine A. M., pulse 112, temperature 101.9°. The tenderness was extreme, the least touch over the ramus of pubes on the right side causing severe pain. At eleven P. M., pulse 120, temperature 102.6°.

"February 5th. The condition was the same. For the first time morphia was given by the mouth. The pain diminished during the day, and the patient's condition was decidedly improved towards night. She was able to lie in any position, having discarded the pillow under the knees. There having been no dejection since the beginning of the attack, and the patient being somewhat annoyed by flatulence, an enema of olive-oil and soap-suds was given in the morning, which was returned without effect. It was not repeated, but at four P. M. a large solid faecal dejection took place spontaneously, with very little pain.

"February 6th, 7th, the patient appeared to be convalescing. There was some looseness of the bowels. The pulse fell to 96; the temperature was normal.

"February 8th. Pulse 112. She complained of some pain from time to time, and took a dose of castor-oil, which was followed by several loose dejections with some pain. The pulse at night was 120.

"February 9th (eleventh day). Some pain, as yesterday, with restlessness; pulse 120. At eight o'clock in the evening there was a sudden discharge *per vaginam* of several ounces of very fetid pus, which was followed by great relief of the pain.

"February 10th. Pulse 92, temperature 98.5°. The night was passed without pain, the discharge continuing moderately free, and very fetid. There was hardness, and complete dullness on percussion throughout the lower part of the abdomen, especially in the right iliac region, but the tenderness has much diminished. The vagina was syringed with a solution of carbolic acid several times daily. Wine, quinine, and broth were administered.

"From this time the patient improved daily, though slowly. The discharge continued till about March 1st. She began to sit up two hours each day from that time, and went down-stairs for the first time March 7th."

In answer to a question, Dr. Minot stated that as there was a perfectly formed hymen, no vaginal examination had been made.

DR. SINCLAIR remarked that the abscess seemed to have formed very rapidly.

DR. MINOT suggested that the peritonitis was probably secondary to the abscess. The symptoms occurred just after the close of the patient's second menstruation.

Puerperal Convulsions. — DR. LYMAN read a case of puerperal convulsions reported to him by Dr. Towle, of Haverhill. The case is interesting as showing a good result under an opiate treatment.

Chloroform and Ether. — DR. WELLINGTON asked if chloroform was really superior to ether in convulsions or labor.

DR. LYMAN replied that he saw no reason for thinking so. In answer to other questions he said that when he saw the woman, in consultation, she looked badly, — much swollen, very anaemic. With other things bleeding was suggested as among the remedies which might be resorted to, but it was not urged, the anaemia being an objection. It was considered prudent to postpone venesection at least till after other remedies had been fairly tried. The patient was about eight months advanced in pregnancy. The convulsions were very severe; none occurred during or after labor, and none, with one exception, after anesthesia was begun. As far as obstetrical operations are concerned, he had no hesitation in denouncing chloroform, and said he was afraid of it.

DR. REYNOLDS remarked that the claim is made in the journals that the physical process of labor makes chloroform safe, that is, that the constant access of pain acts, in that respect, as colic does with laudanum, the pain in the two cases conferring equal immunity, although the cases are not fairly analogous. Dr. Reynolds had lately asked a gentleman present, of large experience, concerning a patient who, being nauseated by ether, refused to take it. The gentleman advised twenty-drop doses of chloroform on a handkerchief, to be inhaled at the access of the pains; but he gave it, as Dr. Reynolds saw, more freely than he advised it to be given. The common impression is that deaths from chloroform result from too free administration; he would ask if among the deaths from chloroform, reported in the journals from time to time, there were any which had occurred during labor.

DR. WELLINGTON said that the difference between the two agents seems to be that when the patient is in labor she is in pain, which repeatedly acts against the overpowering effects of the drug, as laudanum sufficient to relieve pain with safety might destroy life in the absence of pain. He had never heard of a case of death from chloroform during labor.

DR. REYNOLDS said further that it was not the pain alone which was advanced as a reason why chloroform in labor was not dangerous, but the pain, accompanied by uterine contraction, it was alleged, secured at short intervals a supply of blood to the nervous centres. He was not qualified to judge whether this was sound reasoning or not. It was analogous to what gentlemen in Paris did when they tipped up the patient so frequently.

DR. MINOT suggested the recumbent position of the lying-in woman as another reason for her safety. A large proportion of the deaths reported as from chloroform had been in patients who were sitting up at the time. He questioned whether the horizontal position might not favor the escape from the lungs of the heavy chloroform vapor.

DR. RICHARDSON said he had heard Sir James Simpson state that he had given the question of death from chloroform in labor much attention, but had been unable to find a single instance of fatality.

DR. LYMAN remarked that ether subdues the pain — itself a paralyzing influence — quite as well as chloroform, with none of the danger caused by such a paralyzing agent as the latter.

DR. WELLINGTON asked, "What shall we do with the fact that no one, so far as we know, has had a death from chloroform in labor?"

DR. LYMAN replied that one circumstance is that chloroform is not given in labor so continuously as in other cases; again, we do not know that cases may not have occurred which have not been reported.

DR. WELLINGTON mentioned the case of a patient who insisted upon taking chloroform, and did take it very freely. That death from chloroform does not result from the quantity taken appears from the frequency with which death occurs before the patient is sufficiently anesthetized for the surgeon to begin his operation.

DR. SINCLAIR referred to a case which came under his observation, in which a toe-nail was to be removed. The patient got a whiff or two of chloroform and was dead. He was sitting up.

DR. RICHARDSON said that, according to the German observers, chloroform is much more apt to affect unfavorably the child delivered, than ether.

DR. ABBOT stated that in fatal narcosis from chloroform the blood does not coagulate. From this we may understand why insensibility produced by chloroform might result in death of the child. Nélaton says a good deal of the advantage of inverting the patient as a means of restoration. During labor and the suspended respiration accompanying the efforts, the blood is forced to the brain. Under certain circumstances, alarming symptoms may occur with the use of ether, and be relieved in the way mentioned. In the case of a child upon whom Dr. Cabot had operated for diphtheritic croup, the condition was very bad immediately after tracheotomy. Dr. Abbot held the child by the hips, head downwards, and shook him, partly to relieve the

trachea of mucus, and partly to improve the supply of blood to the brain. Relief followed the procedure.

DR. LYMAN said he did not consider the method as original with Nélaton. He had seen the same thing done by Dr. Hodges.

DR. REYNOLDS considered the main question to be whether medical means alone should have been thought sufficient in the case of a woman at eight months, who had had three or four convulsions.

DR. LYMAN replied that he could not help feeling that, the os not being dilated, although there was a slight show, it was his duty to try several remedies — chloral, ether, chloroform, opium — before resorting to manual interference. If the child had been dead, this circumstance would have rendered the question more doubtful.

DR. REYNOLDS asked Dr. Lyman what he would do if the case were that of a wife of Henry VIII. and the king's only probable chance of offspring, and the accoucheur were ordered to consider this chance.

DR. LYMAN said he should probably do just what Napoleon ordered when the King of Rome was born, — treat her as he would a peasant woman.

DR. REYNOLDS inquired whether the child's chances should not be considered.

DR. LYMAN said he thought the treatment was a question of time. The patient was in no immediate danger of death, the pulse was good, and there was no evidence of exhaustion. She was intelligent and conscious on coming out of the convulsions. If a very violent convolution should occur, there would be time enough then. If there had been more continued coma, there would have been a decided indication for interference.

Puerperal Convulsions treated with Venesection. — DR. MINOT reported a case of convulsions which he had seen in consultation with Dr. Ayer. The woman, a stout primipara, was delivered at four p. m. An hour afterwards she had a convolution, and then six or seven. At eleven p. m. she was insensible and snoring loudly; the pupils were fixed. The tongue was lacerated and bleeding; the pulse was hard, the legs oedematous. Dr. Minot agreed with Dr. Ayer as to the propriety of bleeding, and a pint and a half of blood was drawn. Towards the end of the bleeding the respiration became less stertorous; the patient recovered consciousness. She afterwards had two very slight threatenings of convulsions, but she did perfectly well, and is nursing her baby. In answer to questions, Dr. Minot stated that the face had been turgid with blood, and the pulse had had a hard, sharp stroke. He had thought the woman would die, and that bleeding, if it did no good, would do no harm. She was unconscious between the convulsions after the fourth, and for some hours before she was bled. The bleeding softened the pulse, but did not particularly affect its rate.

DR. TUCK said he was reminded by this case of one which occurred in the Boston Lying-in Hospital. There were fourteen convulsions, the prognosis was bad, the patient was not bled, and she recovered.

Bright's Disease in Parturient Women. — DR. CURTIS inquired of the gentlemen present if they had had much experience in confinements in persons subjects of Bright's disease. One would naturally expect, he remarked, a

good deal of trouble. He had had a case of a woman who had Bright's disease four years. During her pregnancy she was better than she had previously been. She was comfortably delivered of her first child, without ether, at about the eighth month. The child was small. The mother died, six weeks after confinement, with œdema of the lungs. It was found at the autopsy that one kidney was entirely gone, the other diseased. There had been no convulsions, no trouble whatever, at the confinement.

DR. REYNOLDS remarked that it was an interesting question how well the kidneys bear the condition incident to convulsions where these have recurred in two or three confinements.

Uterine Malformation. — DR. ABBOT reported a singular malformation of the uterus in a patient twenty-three years old, under his care. She had been apparently a healthy woman, of great strength of will, and nervous temperament; she had been married four or five years, yet never pregnant. For years she had been subject to uncomfortable sensations about the pelvis, pain in the region of the left ovary, backache, discomfort in walking; but she had kept to herself the sufferings which she had from any over-exertion. Last fall she had a mild typhoid fever, and certain symptoms led to a vaginal examination. The vagina was found to be extremely sensitive; the anterior cul-de-sac was deeper than the posterior. The uterus was not prolapsed, but the lower portion of the neck was bent directly forwards at a right angle, the flexure being in the vagina, not in the abdomen, and apparently fixed by cicatricial tissue. When the tip of the cervix was straightened out by the finger, on being let go it sprung back to its previous position. The sound entered about three quarters of an inch. The patient was subject to dysmenorrhœa. Dr. Abbot thought the only remedy was to slit up the cervix as far as the elbow. There was no history of injury except a fall in childhood.

DR. REYNOLDS suggested the use of an air pessary, although it was difficult to see, he said, why such applications aid the position of the parts.

DR. ABBOT said that he had applied glycerine plasma on a tampon of cotton-wool, by which the sensibility was diminished while the deformity remained. Ten days he had put in a soft rubber ring. He considered this form of anteflexion as different from the ordinary ones, in that the fundus was in the normal axis and the neck was bent across the vagina below.

DR. REYNOLDS said he thought the relative position of the flexed uterus to the walls of the pelvis was a subordinate matter.

Embolism of the External Iliac. — DR. HOMANS reported the case of a woman who died at the Boston City Hospital at the age of twenty-three. Early in March she fell on the ice, striking her side. This injury was followed by vomiting. On the third day she had a chill, with pain in the foot. She came into the hospital with the foot and ankle gangrenous. No pulsation could be felt anywhere, from the groin downwards. The patient was confined of a dead child on March 30th. She died April 2d. At the autopsy the external iliac was found plugged for three inches of its extent,— whether the embolism was the result of the fall, or of pregnancy, was a question. In the spleen was evidence of an old clot. There was no other disease in the body.

DR. REYNOLDS remarked that the gangrene preceded labor, although it

might have followed the death of the child ; and asked if it were not conceivable that the dead *fœtus* may have been the starting-point of the disease which occasioned the embolism, poisoning the intervening cellular tissue.

DR. LYMAN said that there was no visible evidence of any such communication.

DR. REYNOLDS said he thought such evidence was usually absent.

DR. LYMAN mentioned the case of a patient whom he was called to see last month. The toes were discolored by gangrene. The femoral pulse was good, but there was none below. This was in a strong, healthy man, and there was nothing to account for the stoppage of the circulation which existed.

High Temperature in Puerperal Cases. — DR. STEDMAN reported a case which he considered interesting as resembling one reported by Dr. Lyman at a former meeting (high temperature after great loss of blood from aborting, with alarming pulmonary symptoms). Dr. Stedman's patient had so great haemorrhage after her first labor that the attending physician injected perchloride of iron. At the second labor there was severe haemorrhage, and iron was again resorted to. In the first labor she had ether; in the second, she was only amused by it. The labor was an easy one. The patient did well for three weeks, when there occurred a violent chill, followed by a temperature of 105°, and almost colliquative sweats. Dr. Stedman was unable to assign a definite cause for these symptoms. There was no uterine tenderness, no trouble in the abdomen. There had been slight cough, and on the second or third day after the chill there was tubular breathing and bronchial voice in one of the backs, — evidence of solidification. On the second or third day an herpetic eruption appeared about the lips. The physical signs of pneumonia disappeared rapidly. The patient was twice cinchonized, and she got Fowler's solution, but the chills and sweats continued. Dr. Stedman said his theory was that the last chills proceeded from the patient's extreme nervousness. He reminded the society of a case reported at a former meeting in which a temperature of 106° could be accounted for only by an altercation with the nurse. That an hysterical attack will send up the temperature, Dr. Stedman declared himself more and more convinced with every half-year's experience.

Diphtheria. — DR. STEDMAN gave the case of a child one and a half years old, tuberculous-looking, living in an unhealthy district. It had had strabismus from the age of three months. The next symptom, three days after the first visit, was tremor of the left arm; then the same arm became powerless; finally the legs swelled and became helpless, and the veins were corded. Albumen was found in the urine. Reviewing the history of the case he found the child had had very sore throat with swollen glands. The diagnosis was diphtheria.

DR. ABBOT suggested that the disease might have been scarlatina. He had never seen anasarca with the paralysis of diphtheria. In the latter disease the paralysis is unilateral, whereas, in Dr. Stedman's case, both legs were affected.

DR. STEDMAN replied that the legs were helpless on account of the swelling, which, with the corded veins, still persists. The patient has regained the use of the left arm.

Prolapse of Bladder and Rectum complicating Labor. — DR. WELLINGTON reported a case of a multipara in which he was called to assist Dr. Cogswell,

of Cambridgeport. The first labor had been natural; in the second the patient was instrumentally delivered of triplets. At the present, the third labor, Dr. Wellington found the vagina plugged full of what proved to be the prolapsed bladder and rectum. These parts were driven forcibly downwards and almost out by the hard pains. The finger could be introduced between the prolapsed folds, and the uterus was found pretty high up, the os dilated, the parts rigid. The hand, and even the doubled fist, was kept within the vagina, but the pains seemed to expend their strength upon the prolapsed organs. After a time the pains stopped and the woman went to sleep. With the return of the pains, the other phenomena were renewed. The hand was now introduced into the vagina, and, manual dilatation, requiring half an hour for its accomplishment, having just been completed by Dr. Marcy, the child was turned and delivered alive, although the head came with some difficulty. The curious part of the case was the effect of the pains upon the prolapsed organs, but these did not interfere with the delivery. The patient has done well so far as heard from.

Dysmenorrhœa treated by Valerianate of Zinc. — DR. MINOT read the following account of three cases of dysmenorrhœa treated by the valerianate of zinc with marked benefit.

"CASE I. L. W. B., aged thirty, single, a teacher, has always suffered from dysmenorrhœa. The pain comes on after the second day of menstruation. The next night is free from pain, but the following day it returns.

"October 8, 1874, the patient had iron, bromide of potassium, suppository of morphia, hyoscyamus, and belladonna.

"November 4th. Some general improvement, but no relief to the dysmenorrhœa. Some tenderness over the left ovary. (Strong tincture of iodine externally.)

"December 9th. On the whole, decidedly less pain. (Valerianate of zinc, one grain three times daily, beginning two days before the next menstrual period, and continued till menstruation is over.)

"January 6, 1875. The 'second pain' was less severe. On the whole, a good deal of improvement.

"February 3d. There was a decided improvement during the last period.

"April 7th. There have been two periods since the last report; both were more free from pain than formerly. The soreness in the abdomen seems to be relieved by the iodine; the pain, by the pills. The patient is well satisfied with the result.

"CASE II. Miss S., Swiss, governess, aged twenty-seven, five years after menstruation was established experienced a strong mental excitement during a period. From that time she had always had severe pain, with nervous symptoms (loss of consciousness, convulsions, etc.), during a few hours after the flow had begun. The discharge occurs every twenty-eight days, is abundant, clotted, and accompanied with the expulsion of shreds 'like pieces of skin.' It lasts only two days. Uterus low; sound enters easily to normal length; slight inclination backwards, with tenderness. No granulations or abrasions. (October 27, 1874. Hot vaginal injections; Quevenne's iron; valerianate of zinc, one grain three times daily, commencing a few days before the beginning of menstruation.)

"November 18th. The period began on the evening of the 15th, and was far less painful than usual; the relief was very great.

"December 19th. Another period has passed with very little pain.

"January 18, 1875. On the 8th she was unwell, being one week too soon, which she ascribes to 'taking cold.' This not having been anticipated, no valerianate of zinc was taken beforehand, but the medicine was employed as soon as the patient discovered that she was menstruating. The pain was very severe, and she was in bed on the 8th, 9th, and 10th, when it ceased. Since then she has been weak and nervous, sleeping poorly. The iron has been discontinued. It was ordered to be renewed.

"April 1st. Since the last report, Miss S. has been comparatively free from pain, the zinc having been taken as directed. She is satisfied with the result.

CASE III. Miss L., twenty years old, a teacher, delicate-looking, has always suffered great pain during menstruation, which lasts the first two days, during which she is obliged to be in bed, quite incapacitated for work. She consulted me in November, 1874, and was advised to take valerianate of zinc in doses of one grain three times daily, beginning at least twenty-four hours before the expected flow.

"February 13, 1874, she called to report. She has menstruated three times with great relief, each epoch having been less painful than the preceding one, the last (just finished) having been unusually comfortable. She thinks she has been greatly benefited by the medicine.

"April 9th. The relief at the monthly period continues, and she is satisfied that it is due to the valerianate of zinc."

DR. CURTIS asked if these were not cases of neuralgic dysmenorrhœa.

DR. MINOT replied that he thought it difficult to exactly characterize the different varieties of dysmenorrhœa.

DR. LYMAN said he had utterly failed to give permanent relief by valerianate of zinc, ammonia, or iron, all of which he had repeatedly tried; and he would ask Dr. Minot and others if they had found any of these agents trustworthy, as he had been disappointed in them, although used persistently in doses of from two to four grains in various nervous and neuralgic affections.

DR. MINOT said he had not tried these in dysmenorrhœa; but there is no question of the anodyne properties of valerianate of ammonia, in not less than three or four grain doses.

DR. ABBOT said he had used valerianate of zinc a good deal, in two-grain pills, sugar-coated, and generally oftener than three times a day. If made up extempore it is very nauseous. Dr. Abbot considered it a very valuable remedy, rarely using any other valerianate. His patients sometimes take ten or twelve grains a day.

DR. LYMAN suggested ginger syrup as a convenient vehicle of administration.

DR. MINOT stated that he once took a good deal of valerianate of ammonia in ginger syrup for *tic douloureux*, and with excellent effect; but the remedy was extremely disagreeable. This form of valerianate is too deliquescent to be made conveniently into pills. The "elixir" he considered poor stuff.

DR. ABBOT remarked that at a meeting of the American Pharmaceutical Association an elixir of valerianate of ammonia was shown to have a fraudulent admixture of valerianate of morphia.

THE MEDICAL PROFESSION IN MICHIGAN.

ALTHOUGH, as stated in our issue of July 19th, no decided movement has yet been made by the medical schools of the country towards reform in medical education, we are glad to see that there is a decided feeling existing in the profession not to allow the matter to rest where it is, and that the medical press is also taking an active part in the discussion of this important question. At a meeting of the Michigan Medical Society held in Detroit on the 9th of June, resolutions were passed requesting the medical schools of that State to raise their preliminary requirements for the admission of students, and to exact the attendance on three courses of lectures instead of two as is now required. These resolutions were greeted, says the *Peninsular Journal*, with an enthusiasm and passed with a unanimity which indicated very forcibly the sentiments of the society on the question of medical education. This action on the part of the profession in Michigan has been highly applauded by several of our Western contemporaries, who portray vigorously the causes operating to prevent the downfall of the present system. Inaugurated nearly a century ago, it has been left behind in the progress which this country has made, and is now sustained chiefly with motives far from creditable to the men of influence among our teachers. We trust that some of the gentlemen who helped arouse the enthusiasm at Detroit the other day will be able to find sympathizers among the members of the faculties of that State.

The schools are timid and hesitating, and are endeavoring to satisfy the public with half-way measures. Let the profession generally take this matter in hand and press it firmly until a complete reform has been effected. Undoubtedly there are many so-called schools using every device to maintain a struggling existence. One of the chief advantages of this reform will be that such will sink beneath the surface. It should be a motto of the reformers that "from him that hath not shall be taken away even that which he hath."

It is much to be regretted that the condition of the profession in Michigan is not so harmonious as the united action of the members of the State society would seem to imply. The struggle which has been maintained for so long a time between the regents of the State university and the homœopaths has terminated in the appointment of two homœopathic professors, the institution receiving a grant of six thousand dollars annually to defray the cost of instruction in homœopathy. It is stated that although these two chairs have been added to the medical faculty, the regulations have been so modified as to prevent this course from conflicting with the regular course of study, and the regents claim that the new professors are not members of the now existing department of medicine. That this is not the view which the State takes of the question is shown by the fact that the attempt made by the regents a few years ago to establish a distinct homœopathic school was ruled by the Supreme Court of the State to be not in compliance with the law. Moreover, Dr. Sager, the dean of the faculty, who has been connected with the university for nearly forty years, has felt himself called upon to resign in the belief that the homœopathic branch has been practically engrafted upon the medical de-

partment. It is difficult to understand, under the present arrangement, why the other members of the faculty are not teachers in the homeopathic department. Practically they will be until two complete faculties are appointed. We regret to see it stated that the Michigan State Society refused to act upon a resolution condemning the course of the regents, who have, to say the least, placed the medical department of the university in a very equivocal position.

THE POMEROY CASE.

It is with great disappointment that we are coming to the conclusion that the governor does not intend to sign the death warrant of the murderer Pomeroy. It is, of course, a disagreeable duty, and the sentimental philanthropists are no doubt determined to make it as irksome to him as possible. We would suggest, however, to these gentlemen that surely they have already had share enough in Pomeroy's career. He was safe in the reform school when one of their number obtained his release and gave him the opportunity to commit two horrible murders, and now we think they might let justice take its course.

The real question is very happily expressed in a communication to the *Daily Advertiser*, from which we quote: "Whether Pomeroy is a fit subject for capital punishment is not now an open question. After a cautious and solemn trial, to which there does not attach even a suspicion of unfairness, the jury have pronounced him guilty of murder in the first degree, all the exceptions on points of law which could be raised by able counsel have been overruled, the court has formally sentenced him to death, and the executive council, after full consideration of all that could be urged in his favor, has decided against either pardon or commutation of punishment. Nothing remains but the almost mechanical formalities required for carrying the sentence into effect. The governor alone has no better right than the sheriff or the mob to stay these dread proceedings. He is only the hand of the State. If he assumes the functions of the jury, the court, and the executive council, considers anew the question which they have formally decided, and reverses their decision, he commits a gross usurpation."

The governor, in fact, becomes an accomplice in any future murders the boy may commit when his friends shall have carried their second point, namely, his release.

DR. WINSLOW LEWIS.

THE death of Dr. Lewis has removed one from the small circle of professional men now remaining among us whose lives date back into the last century. He was born July 8, 1799, and graduated at Harvard College in 1819. Studying medicine under the late Dr. John C. Warren, he took his degree in 1822,

and subsequently completed his medical education in Europe, where he had the privilege of listening to such men as Dupuytren and Abernethy. On returning to this country he began the practice of his profession, in which he was quite successful, acquiring considerable reputation for skill as a surgeon. His activity as a physician, and the high respect in which he was held by his fellow-citizens, are shown by the numerous positions of honor and trust which he has from time to time held. He was at one time physician of the municipal institutions, and also of the house of correction, and has been for many years one of the consulting physicians of the Massachusetts General Hospital and of the Boston City Hospital. He has also occupied positions in the general court, the common council, and the school committee, and for six years was on the board of overseers of Harvard College.

Retiring from the practice of his profession many years ago, he has been better known to most of the profession of late years as a prominent Freemason, of which craft he has been a member for nearly half a century, during which period he has been the recipient of nearly every honor which it was in the power of the brotherhood to bestow. As past grand master of the masons of Massachusetts, and one who took an unusual interest in the welfare of the order, he was held in high respect by its members, by whom a fitting tribute has been paid to his memory.

His great activity and versatile talents, combined with a warm heart, kindly disposition, and courtly manners, have endeared him to the many classes in the community with which in the course of a long life he has come in contact.

MEDICAL NOTES.

— On the 16th of July, Professor Rokitansky delivered his farewell address before a large audience of professors and physicians in the lecture-room of the Pathological Institute at Vienna. Among those present was Dr. Lizuin, physician to the Emperor of Russia and chief of the Sanitary Bureau at St. Petersburg. The aged teacher was received with great applause. In taking leave, he expressed his intention of not abandoning entirely all active work. In his remarks to his pupils, he explained the nature of pathological anatomy, spoke of the modern tendencies of science, and, among other things, touched upon materialism and woman's rights, of which latter he does not appear to be a champion. In concluding, he exhorted his students to give their work the stamp of their academic training, and to remain true to the principles derived from their alma mater. Deeply moved, the aged man left the lecture-room, accompanied by his colleagues and friends, amidst a tumult of applause and cheers.

— The *Chicago Medical Examiner* and the *Chicago Medical Journal*, after sixteen and thirty-two years respectively of existence, have ceased to appear as independent publications, and have been consolidated. The new journal is to be called the *Chicago Medical Journal and Examiner*, and will be under

the control of an association of gentlemen including some of the best known and most honored names in the medical profession of the Northwest, entitled "The Chicago Medical Press Association." Dr. N. S. Davis retires after more than twenty-five years of work as an editor.

— In an article on the alimentation of new-born infants, *Le Progrès Médical* states that a commission of hospital physicians has arrived at the conclusion that an infant deprived of its mother's milk should have every day seven hundred grammes of milk, one hundred of bread, and seventy of sugar. A distinguished chemist, M. Nestlé, has of late years prepared a very excellent artificial food for infants which has been highly recommended. Twenty grammes of *farine lactée* (M. Nestlé's preparation) in one hundred grammes of water make a milk of excellent composition and taste. It is to be freshly prepared, and given lukewarm from a bottle. At the age of three or four months thirty grammes of the *farine* are to be given in one hundred of water, and the proportion is to be varied according to the constitution and age of the infant. We understand this preparation can be obtained in New York.

— An exercise in gymnastics was given on the 7th of July at Amherst College by the Junior class, to illustrate the instruction given in the department of physical culture, and an address on this subject was delivered the same day before the alumni of the college by Dr. Nathan Allen. He stated that it was almost twenty years since the question of doing something to promote the health of students in college was first agitated and discussed, at the meetings of the board of trustees. This resulted in the erection of the gymnasium in 1859, and the establishment of the department of physical culture and hygiene. Since that time fifteen classes had entered college, and more than three thousand students had taken part in these exercises. It had proved a great success, as was shown by the contrast between the health of the students at the present and their condition before the system was adopted. It has had its influence both in the discipline and in the scholarship of the college. It has been made one of the required exercises, and excellence in this department plays a part in determining the rank of the student.

A SCOTCH INSANE ASYLUM.

MESSRS. EDITORS,— It was my privilege, about a year ago, to spend a day with Dr. Fraser at his asylum, and it seemed to me that he had made his real treatment of mental disease so fully correspond with the best ideal treatment (which consists in treating disease of the mind, as far as possible, like any other disease) that I asked him to favor the profession here with a statement of his methods. I confess I feared that a description, in my own words, of what I saw would be looked upon as somewhat wild. Dr. Fraser's letter is so full of interesting and suggestive points that I send it to you entire.

Although this is looked upon still as an experiment, its success is established, and it cannot fail to have a great influence on the treatment of mental disease.

[August 12,

throughout the world. In fact, it is likely to be classed with those great movements of Pinel and Tuke toward the close of the last, and of Conolly and Griesinger about the middle of the present century. Of course accurate diagnosis, faithful study of character, trained nurses as well as trustworthy attendants, and constant care are needed. If Dr. Fraser had described his autopsy and microscope rooms, it would have been seen that he considered careful pathological research of the utmost importance. Herbert Spencer quotes Dr. Tuke as having said of this asylum in 1872 that in ninety-five per cent. of the patients the policy of unlocked doors was successful. How appropriately the words "The more you trust, the more you may" come from a countryman of Romilly, Dr. Arnold, and Maconochie! The history of the treatment of mental disease for the past century has been a succession of proofs that all efforts to bring elevating and refining influences to bear upon the insane, and to educate their self-respect and self-control, have been followed by the most beneficent results. Great Britain stands unquestionably at the present day at the head of the nations of the world in these respects.

Very respectfully yours,

CHARLES F. FOLSOM.

Fife and Kinross District Lunatic Asylum,
CUPAR, FIFE, SCOTLAND, January 28, 1875.

MY DEAR SIR,—I have the greatest possible pleasure in acceding to your request for a description of my asylum.

It is the district or pauper asylum for the counties of Fife and Kinross. The population of the two counties is one hundred and seventy thousand. The institution is capable of holding two hundred and eighty inmates. The present numbers are, one hundred and ten males and one hundred and thirty-eight females, or about two hundred and fifty altogether. The yearly admissions are from eighty to ninety. There is one attendant for every twelve patients. The patients are classified and each class has its own gallery; the highest number in any gallery is twenty-four, the lowest twelve. The female department has seven galleries, each complete in itself; that is to say, each of them has its own day-room, dormitory or dormitories, single sleeping-rooms, lavatory, and conveniences. Four have two attendants, two only one. This divisional arrangement, though I believe it adds to the working expenses, admits, as I have said above, of classification of the patients. The day-rooms or sitting-rooms for twenty-three patients are thirty feet long, twenty-one feet broad, and eleven and a half feet high. The windows of these rooms are nine feet by seven feet, and the panes are twenty-two inches by eighteen. There are no window panes smaller than twelve inches by ten and a half anywhere. The lower half of each window has brass rods three eighths of an inch thick running transversely across the panes and through the wood-work of the window-frame. I could wrench these rods out with my hands. There is no such thing as an iron bar across a window, and all our window-frames are of wood.

You ask me for the features which distinguish my asylum. I believe these to be, 1st, unlocked doors; 2d, the great amount of general freedom; and 3d, the large number on parole. In common with the Argyllshire asylum, airing courts are not in use. The great attention given to the occupation of the patients and the large percentage of those employed are characteristics of this asylum as well as of two others in Scotland.

First, as regards open doors. Here is a paragraph from my last annual report:—

"I wish now to describe the peculiar feature of your asylum, namely, the open-door system. It was originated about three years ago by your former physician superintendent, Dr. Tuke, and I have no hesitation in saying that the introduction of this system will mark an era in the history of the treatment of the insane. As you are well aware, there are no high boundary walls surrounding the grounds, and the entrance gates stand always open. To make this system as clear as possible, let me suppose that a visitor calls and wishes to see through the asylum. He is received at the front door, which will be found open; he is then conducted through the whole of the male galleries, containing over ninety patients, and thence, *rid* the dining-hall, through five of the galleries of the female side, also containing over ninety patients, without *once* coming upon a locked door. Not only is there this free communication inside the house, but the outer doors of the main ground corridors, which open out on the terraces, are also unlocked. The male convalescent building, which contains from twenty to twenty-five patients, has its doors open from shortly after six A. M. till eight P. M. The inmates are, of course, on parole. Two galleries in the female department still remain under the old system of locked doors. Though not necessary for the majority of their inmates, yet the erratic and mischievous tendencies, as well as the excitement of some three or more in each division, render locked doors necessary.

"Greater contentment is, I believe, the result of the innovation I have just referred to; the sense of confinement, or in other words, of imprisonment, of which even a lunatic is conscious, is absent. The asylum is converted into a home and a hospital.

"A greater number of escapes and accidents would *a priori* be expected from this state of freedom. The escapes have been nine in number, and there are only two which can be attributed to open doors. Four accidents, none of any import, except the suicide previously detailed, have occurred during the year, but none in any way attributable to this system."

This bold advancement in the treatment of the insane is, as I have said above, wholly due to Dr. Batty Tuke. It is to his original mind, to his enterprising spirit, to his confidence in a portion of afflicted humanity hitherto unconfined in, and to his faith in the adage "The more you trust, the more you may," that this new era in the life of the insane owes its initiation. I must confess I shook my head when the doctor first proposed it, and our matron said she could not see "how it would do at all."

The history of this movement is interesting. At first a great deal of wandering about the house occurred, especially from the galleries to the kitchen. A number wandered outside, and some of course attempted escape. Gradually the patients were taught when they were to go out, and what parts of the house they were permitted to visit. Those who escaped were spoken to in presence of the others: they were informed of the inutility of escaping, of the certainty of their being brought back; that they must remain in the asylum until they were better, that every kindness would be shown them, that everything they had to say would be heard and attended to; that when the time came they would

go out by the front door, and that the doctor would be there to say good-by and wish them well. It was wonderful how the most determined bolters ceased from attempting to escape. I could quote a dozen cases where a remarkable change in this respect occurred. The most intelligent escapers were taken to the doors, shown their openness, and then informed that confidence was reposed in them, that escape was unproductive of any good, and that the way to get home was to show themselves worthy of trust. Not only with permanent residents did this state of imposed confidence have a beneficial effect, but also with transfers from other asylums. For example, a lady patient was admitted some time ago from another asylum. The account sent was that she was most determined in her attempts at escape, that she had broken the framework of her window and set fire to doors in order to escape. Her habits were said to be dirty. It was a case of moral insanity, and the intelligence was keen and clear. After admission, she was shown the open doors (one leading out to the terrace within ten yards of her sitting-room) and the freedom that existed. Confidence was preached to her and she was informed that good behavior of every kind was expected of her. She now walks out daily on the terraces, unattended whenever she likes, yet there has never been the least attempt at escape. She has never been dirty in her habits. This patient has been in three other Scotch asylums, and she says that this is not like an asylum at all, that it is unlike any of the others she has been in, and that here she has no desire to run away.

Your experience of the insane will cause you no doubt to say, "But all cannot be treated in this wise." I grant that, but what I wish to impress upon you is the great number that can. You will see I have two departments on the female side under the old régime. An attempt was made to leave one of these off the lock, but the mischievous doings of three chronic maniacs, and the incurable wanderings of two or three demented and suicidal patients, prevented the open door from being persevered in. Excepting these, the patients, numbering from one to eighteen, would be all the better for the unlocked doors. The other department is one of our new buildings and is separate. From its situation and its inhabitants, chiefly chronic maniacs, it would be inexpedient to attempt the step there.

I wish especially to describe our male convalescent building. It is a house capable of holding thirty-three patients, but at present there are only twenty-two resident there. Its doors are open every day from seven in the morning till eight and nine in the evening. The inmates are all on parole. No one has broken his parole during the last two and a half years. An attendant and his wife have charge of the place. They have a little child five years of age. They all sit down to meals together, the patients, the attendant, his wife and child. The latter two mix with the patients at all times. This was also a step of Dr. Tuke's, and admirable have been the results. When men associate only with each other, they are apt to degenerate; coarseness, swearing, and fighting predominate; but when a woman is present, and especially when a sweet little girl mingles with them, swearing and angry passions cease; at least such has been the effect in this department of my asylum. There are two dormitories up-stairs, one in which no attendant sleeps (ten patients are left to themselves), and the other is in charge of an attendant who comes down from the main building for the night. This place is our Gheel.

"I believe that the conditions above described, coupled with constant occupation, result in (1) greater contentment and general happiness among the patients, (2) better conduct in every one, *i. e.*, less excitement, (3) the preservation of the individuality of each patient, (4) less degradation, and (5) greater vigilance and care on the part of the attendants. As regards the fourth result, I believe it to be strikingly true. Our degraded patients are importations; few, if any, are indigenous. I never allow any sitting on floors or crouching in corners like cats or dogs. It takes a long time to cure many of this habit; but of course, as you know, the insane take from four to six times longer than ordinary people to be taught anything.

Occupation is what I have the utmost confidence in. Its results are most beneficial. Almost every male patient can fill and wheel a barrow, and the majority can use a spade. So almost every female patient can use a needle and thread or a knitting-needle. Constant supervision soon teaches one what is most suitable to each. I beg to refer you to Sir James Coxe's report, which you will find in the annual report which accompanies this letter. Here is another paragraph from my last annual report:—

"Attention is being constantly and increasingly directed towards the occupation of both sexes. At the present date, all male patients, with the exception of from five to eight, are sent out every day in parties arranged according to their capabilities for work. Attendants accompany each set of workers. The head and sick-room attendants are the only ones retained in the house. On the female side there are three work-rooms, one devoted to the main sewing requirements of the house, and the others to the teaching and encouraging to work of the idle and demented. In these three rooms are above ninety patients. The laundry, the kitchen, and the house generally give employment to about forty more, so that the actually idle are reduced to a minimum. My desire and aim is to make your asylum a veritable bee-hive. The men work both forenoon and afternoon, but their hours are not long. The females, though kept at work in the forenoon, spend the afternoon in walking and outdoor recreation. I am at present dispensing with the use of airing courts, but I shall make no comment on this step until after a year's experience."

Airing courts are a mistake, especially for females. Not long ago I used to send out the demented, the chronic maniacs, and the idle to the airing court of a morning. Of course, having nothing useful to do there, they did mischief, quarreling among themselves, getting excited, and increasing their destructive habits. The patients being safe within four walls and out of sight, the attendants were heedless, habits and practices occurred which the attendants for the sake of decency and for the respect of their sex would have been active and vigilant to prevent elsewhere. Those who used to go to the airing court in the morning are now collected around tables and set to work at knitting, sewing, darning, etc. The contrast between the airing court and this room is very striking. This very morning this work-room was quiet in the extreme. I went round them all, spoke to each, praised their doings, and encouraged the idle, and there was not a word out of place. Had they been in the airing court they would have squatting in all the corners, rampaging about, holding forth in loud tones, etc. Occupation and the working together in the way described

have a most decided inhibitory effect. The airing-court system permits every insane propensity to run to weeds.

You ask me to tell you about the treatment of the patients. Let me in complying with this request describe the plan of treatment I adopt in case of acute mania immediately after admission. It is much the same as Conolly's, which is described by him in his work on *The Treatment of the Insane*, at pages 43 and 47. A warm bath is first given; then the patient is put to bed in the padded room; food is offered, and every plan is adopted to coax the patient to partake of it voluntarily. I often find feeding by the opposite sex succeed when an attempt by one of the patient's own sex fails. Should food be refused, I have no hesitation in using the pump. The first two nights I give chloral, as it is my firm conviction that it is our positive duty to procure sleep as soon as possible. My idea is, the longer mania is allowed to go on, the greater risk there is of subsequent dementia. If sleep obtained by chloral cuts it short, what can be said against it? I have tried both methods, the let-alone one and the treatment by sedatives (chiefly chloral and bromide) or medicinal treatment generally. As a medical man, as a student of clinical medicine and of therapeutics, and as one who hopes that careful investigation, physiological, pathological, and therapeutic, will ere long reveal a method of treatment whereby all cases of acute mania will be cured, I much prefer the latter course. I think precious little of the superintendent who can stand idly by and see a case of acute mania running on in its mad career day after day. What is such a superintendent's *raison d'être*? Food! Food! is such an one's cry, but it is my experience that food will not subdue one case of acute mania in twenty.

In one or two hours after the chloral and feeding, the patient generally sleeps, and if next morning the excitement returns, I seclude for the day. I deem this seclusion most wise; in fact it is imperative to meet the requirements of the patient's mental condition. Chloral is given again the second night and perhaps the third night; and by the third day the patient is generally quiet or disposed to keep in bed, and so avoid seclusion. The appetite is keen after chloral, so there is little trouble with food after the first dose. I have pursued this plan for the last two years and with the most decided success. When the patient is removed from the bedroom, the sick-hall is the next resort. Here there is quietness and every comfort, and the whole surroundings inhibit any tendency to excitement.

I seclude in epileptic mania and in paroxysms of impulsive, aggressive, and destructive mania. I have two very bad cases of the former and three of the latter. Here is a paragraph from my report, containing my opinion in regard to seclusion:—

"Seclusion has on several occasions been resorted to by me. My *present* opinion is that it is the most humane, beneficial, and wise course of action under certain circumstances. During the present year there have been two or three cases subject to paroxysms of great excitement. I have occasionally been present in the galleries when such outbursts have occurred, and have been witness of how the peace, quietude, and industry of the other inmates have been disturbed, and the excitable roused. Great destructive pro-

pensity is generally a feature of these attacks. In such cases, one of two things must be done: the patient must either be restrained by two or more attendants (the worst form of restraint), or he must be put into seclusion. The former plan cannot be carried out where there is a minimum staff, but even had I sufficient at my command, I believe seclusion to be the more beneficial mode of treatment in every way. There are cases, at least this asylum possesses such, in which great coarseness of language characterizes the paroxysms; and I maintain that such cases, in consideration of the feelings of the other inmates and attendants, demand their temporary seclusion. Constant supervision of the galleries has determined me in this opinion. Restraint I have not resorted to."

As regards the chronic harmless insane, I here subjoin another extract from my report: "It is my opinion that many chronic lunatics do not require asylum treatment; they can be sufficiently cared for and guarded by their friends or others whom the proper authorities deem fit custodians. The chronic lunatic I refer to is one who is harmless, trained to be cleanly and perhaps industrious, whose mental condition may be described as that of a premature second childhood, and of whose recovery no hope can be entertained. Such an one does not require constant medical supervision, the expensive appurtenances of an asylum, nor the services of trained attendants. The proposed method of administering the grant from the Imperial Exchequer cannot fail to cause asylums to be crowded with such lunatics."

Dr. Arthur Mitchell's book on the Insane in Private Dwellings will give you a most graphic account of what formerly existed and what exists at the present day.

I trust the foregoing remarks convey the information you desire, and I shall be very happy to answer any further inquiries you may wish to make. If any of my professional brethren on your side of the water desire to see this asylum, they will find me a most willing cicerone.

With best regards, I am dear sir,

Yours most truly,

JOHN FRASER.

DR. CHARLES F. FOLSOM, BOSTON.

WEEKLY BULLETIN OF PREVALENT DISEASES.

THE following is a bulletin of the diseases prevalent in Massachusetts during the week ending August 7, 1875, compiled under the authority of the State Board of Health from the returns of physicians representing all sections of the State:—

Throughout the State the prevalence of the diseases of summer continues without abatement. In many places cholera infantum has an unusually severe and fatal type. Except the diseases above alluded to, acute affections have almost disappeared from the community. A marked uniformity in the relative prevalence of the diseases which are rife will be noticed in the following report of the different sections.

Berkshire : Diarrhoea, dysentery, cholera morbus, cholera infantum.

Valley : Diarrhoea, dysentery, cholera morbus, cholera infantum, rheumatism. Some well-marked cases of intermittent fever have been observed in Springfield.

Midland : Diarrhoea, cholera infantum, cholera morbus, dysentery.

Northeastern : Diarrhoea, cholera morbus, cholera infantum, dysentery, typhoid fever. Measles and whooping-cough are epidemic in Beverly.

Metropolitan : Diarrhoea, cholera morbus, cholera infantum, dysentery.

Southeastern : cholera infantum, dysentery, diarrhoea, cholera morbus, rheumatism. Nantucket reports dysentery as unusually prevalent and severe.

The week has witnessed an increase in the prevalence of cholera infantum and dysentery ; all other diseases remain as at last report. The increase affected mainly the Midland, Northeastern and Southeastern sections.

F. W. DRAPER, M. D., Registrar.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JULY 31, 1875.

	Estimated Population.	Total Mortality for the Week.	Annual Death-rate per 1000 during Week.
New York	1,060,000	815	39
Philadelphia	775,000	436	29
Brooklyn	500,000	309	32
Boston	350,000	214	32
Cincinnati	260,000	91	18
Providence	100,700	45	23
Worcester	50,000	29	30
Lowell	50,000	19	20
Cambridge	50,000	27	28
Fall River	45,000	29	34
Lawrence	35,000	18	28
Springfield	33,000	10	16
Lynn	28,000	12	22
Salem	26,000	10	20

RESIGNED AND DISCHARGED.—Charles A. Holt, of Chelsea, Assistant Surgeon First Regt. Infantry, M. V. M., July 26, 1875.

George E. Pinkham, of Lowell, Assistant Surgeon Sixth Regt. Infantry, M. V. M., July 20, 1875.